

ENERGY AND ENVIRONMENT CABINET DEPARTMENT FOR ENVIRONMENTAL PROTECTION DIVISION OF WATER 300 SOWER BOULEVARD FRANKFORT, KENTUCKY 40601

INSTRUCTIONS: Completing the Monthly Operating Report (MOR)

These instructions are for the MOR version 2025.1, which is available at: https://eec.ky.gov/Environmental-Protection/Water/Drinking/DWProfessionals/Pages/Compliance.aspx

If you have any questions, please email us at DrinkingWaterCompliance@ky.gov.

Key to MOR Pages:

Use the Bookmarks page or the tab color on the MOR Excel workbook to identify which pages each type of water system is required to fill out.

YELLOW – Required by all water systems GREEN – Required by all systems with a water treatment plant

GREY – Required only by some water systems

Contents

General Notes on using Excel MOR:
Additions and Changes in the 2025 MOR 4
Submitting the MOR to DOW5
Bookmarks6
Cover Sheet6
P1 - Chemicals9
P2 – Water Quality
P3 – Turbidity
Page 3A – Individual Filter Effluent Turbidity Exceedance15
Page 4 – Filters
P5 – Disinfectant Residual
P6 – Chlorine Dioxide
<mark>P7 – Fluoride</mark>
P8 – LT2 Bin2
P9 – UV
P10 – Membrane Filters
P11 – Clarifiers
P12 – Water Loss
Plant Summary Sheet
Summary Sheet
Purchase Sale Worksheet25
Comments
Annual Data
Appendix A: Microsoft Excel Basics
Appendix B: Troubleshooting eForm 169 Error and Warning Messages

Submitting the Completed MOR to Division of Water:

- Upload the MOR on the Drinking Water Information and Data Submittal Form, eForm 169
 - The eForms home page is located at: <u>https://dep.gateway.ky.gov/eForms</u>. You will need to create an account to use the eForm; contact us for assistance in setting one up or review these <u>eForm 169 instructions</u>.
 - Upload the original Excel formatted version of the MOR *do not convert it to a PDF*.
 - Upload no later than the 10th of the month following the reporting month
 - Remember to also complete the last page, Annual Data, with your December MOR.

General Notes on using Excel MOR:

- > If you are inexperienced in Microsoft Excel, see some general information in Appendix A.
- Use the 'Bookmarks' page to navigate to the pages you need to fill out. After filling out each page, you may jump back to the Bookmarks page by clicking the 'Return to Bookmarks' cell in the corner of each page.
- Fill in only the parts of the MOR that apply to your system. Ignore and leave blank the sections that do not apply. Use the **Bookmarks** page or the tab colors to identify what sections your water system is required to use. Yellow tabs are required by all systems; green tabs are required by all water treatment plants; gray tabs are only required for water treatment plants that use those treatment processes, or for specific conditions.

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Page4 Filters Page5 Dis. Residual Page6 Chlorite&ChlorineDioxide
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- Notice while filling out the MOR in Excel: as data are entered some cells will calculate and populate numbers and results at the bottom of the page and on other pages. Some cells may be linked and waiting for data from other parts of the MOR to be entered, so don't be alarmed about blank or incomplete cells if you are only midway through the month.
- > Throughout the MOR, look for cells highlighted in yellow; these are important areas that need to be filled in.
- Each page is on a separate sheet (listed like tabs across the bottom) in the MOR workbook. Each page is named according to the information it contains.
- Do not delete rows, columns, or pages on the MOR, even if they are not of use by the water system. Just leave them empty if not needed.
- Printing the MOR: do not print the MOR for submittal to DOW; the new (2025 and later) Excel version of the MOR is not optimized for printing. To print for your records, go to "File" then "Print". In the Settings section, choose "Entire Workbook" in order to print all the pages. There is also the option to enter specific pages to be printed. Use these same steps to convert the file to a PDF, but select the "Print to PDF" option instead of choosing your printer. Note: DO NOT SUBMIT A PDF OR PAPER VERSION OF THIS MOR TO DOW.
- We recommend that the MOR file first be saved as a "Blank" MOR; this can be used as a starting point each month. Then, open the "Blank" file and fill in all of the month's information/data. When ready to save it, click on "File", "Save As" and rename the file. The new file name should include the PWSID, the month and the year you are reporting for, and the correct plant ID (A, B, or C) (Example: KY0123456_MOR_0225_A for the Feb, 2025 MOR for Plant A).

This will keep each month's data separate for your system and avoid having to clear the numbers each month before entering the current data. This will also avoid duplicate filenames in the DOW system when received.

Leave cells empty if there are no data to input. Do not enter "0" (zero) in any of these spaces. (For example, do not enter "0" in the spaces for the 31st day if there are only 30 days in the current month). The "Average" calculations will not be correct if "0's" are used.

Additions and Changes in the 2025 MOR

- Some pages are consolidated: Earlier versions of the MOR had several pages for Chemicals and Water Quality measurements, in order to enable easier printing. These pages have been consolidated into a single Chemicals page and a Water Quality page to enable ease of data entry.
- There is no longer an AWOP (Area-Wide Optimization Program) page. All sections of the AWOP page have been added to P3 Turbidity.
- Individual Filter Effluent (IFE) Turbidity monitoring should now be reported by all surface water treatment plants (and is recommended for many groundwater treatment plants) on P3 Turbidity. 40 CFR 141 Subparts P and T outline specific requirements related to IFE turbidity monitoring.
- If chlorine dioxide is the primary disinfectant used, it should only be reported on P6 Chlorine Dioxide. Do not add chlorine dioxide in the Disinfectant columns on P1 Chemicals and do not report chlorite monitoring on P2 Water Quality.
- > There are several new pages:
 - P7 Fluoride: Columns for reporting daily fluoride added and fluoride monitoring results at the plant tap and distribution system have been moved from the Chemicals and Water quality pages and are now on this page.
 - P10 Membrane Filt.: This page is for water treatment plants using membranes for filtration. Surface water and GUDI systems should report on this page as well as P3 Turbidity.
 - P11 Clarifiers: Treatment plants using clarifiers should fill out this page.
 - o P12 Water Loss: This is a worksheet to help calculate and identify water loss
 - Purchase Sale Worksheet: This worksheet can be used to track daily purchases and sales from/to each water system with a consecutive connection.

Submitting the MOR to DOW

The 2025 (and later) version of the MOR is designed to be submitted to DOW via an eForm, so it can provide error checking to water systems and be uploaded into the DOW database. EForm 169 has been modified with additional features to enable this.

- 1. Login to your eForm account and filter for eForm 169 (eForm 169 Instructions).
- 2. Enter the pertinent data (PWSID, name, phone, email, etc.)
- 3. In the 'Additional Tools' section, click the 'Monthly Operating Report' button. Select the MOR file that you want to upload. The MOR must be on the most current version of the Excel template.
- 4. Then, click the 'MOR Error Check' button to check for errors. The eForm will not allow uploading until the MOR has been checked for errors.
- 5. Address any errors or warnings listed, if needed, then repeat Steps 3 and 4.
- 6. If you want to add additional documents to your MOR submission, use the 'Upload File' button (this is uncommon).
- 7. Use the 'Click to Submit to EEC' button to submit the MOR to DOW.

ronmental-Protection/Water/Drinking/DWProfessionals/Pages/Compliance.aspx latest version of the MOR electronic format from the above location
latest version of the MOR electronic format from the above location
ad file
);

Bookmarks

This page contains a **Table of Contents** for all pages. Use this page to easily navigate to the other pages of the MOR. Click on the blue text to jump to the page desired. After completing a page of the MOR, you may return to the Bookmarks page by clicking the 'Return to Bookmarks' link at the top left of each page.

Cover Sheet				
System type	Type \mathbf{X} in the yellow box next t appropriate system type for you system.	co the surface water (sw) ur water groundwater (gw) with Filtration gw - NO Filtration GW - NO Filtration gw UNDER DIRECT INFLUENCE OF SW PURCHASE / DISTRIBUTE ONLY		
Operating question	n Treatment plants only: answer plant was operating in the curre comment on the Comments pay systems: leave this question Treatment plants only: Was plant operating this month? Yes No	the Y/N question about whether the ent month. If not operating, provide a ge about why not. Purchase-only blank.		
Month & Year	The month and year reported a	The month and year reported as MM/YYYY format.		
	Note: It is essential that you enter in two digits for the month (e.g., '06' for June) and four digits for the year (e.g., '2025', <i>not</i> '25'), and do not enter any spaces. You will receive an error message when uploading otherwise.			
MONTH & YEAR (mm/yyyy) 02/2025				
PWS ID and Name	The unique 9 digit state code and number (KY0000000) of the water system and the name of the water system. For PWSID, be sur to enter all 9 digits and no other digits (i.e., no hyphens, dashes, or spaces).			
Agency Interest	(AI) A state-assigned system s To find the AI: When filling out the AI number will appear in th DOW if unable to locate the AI.	pecific identification number eForm 169, after typing the PWSID e top right of the eForm. Contact the		
F	Public water system identification number (PWSID) (*)	Agency Interest # (AI):		
	KYXXXXXXX	Al Number		
	J			

Dist. ClassSelect the appropriate classification of the distribution system (e.g.,
2D, 3D, etc.). Distribution classification is based on population; see
401 KAR 8:030, Section 2, for details.

Plant Name & Class:	Type the plant name and select the appropriate plant classification
	(e.g., 3A, 2B, etc.). Plant classification is based on volume of water
	processed; see 401 KAR 8:030, Section 2 for details.

Plant IDSelect from the dropdown for the treatment plant that is being
reported. (Example: TPA, TPB, or TPC)
Submit a separate MOR for each treatment plant.

Source Name & County

Name(s) of water source(s) for the water plant. If the source water is purchased, type in the PWSID of the supplying water system(s) and the county.

Operator(s) Name, class (e.g., Treatment III A or Distribution II) and certification numbers of operators *responsible for running the plant*. The MOR does not require a full report of all operators, but only the operator in charge during each shift.

Formatting: CLASS – use only letters and do not use hyphens, dashes, slashes, or Roman numerals (avoid / \ or -). List the highest level of licensure only. For example, an operator licensed in distribution and treatment should list the treatment class (e.g., 3A or 2A). If there is an operator in training, write it exactly like this: **Operator In Training**

<u>Formatting: CERTIFICATION NUMBER</u> – use only numbers and do not use hyphens, dashes or slashes (avoid / $\ or -$). Type in only the highest level of certification number an operator has (e.g., for an operator that is certified in treatment and distribution, list the treatment certification number only, not the distribution certification number).

*To update DOW about operator changes at a facility, as required by 401 KAR 8:030, Section 1(6), use eForm 136: Wastewater and Drinking Water Facility Update for Licensed Operators. This can be accessed the same way as eForm 169 (https://dep.gateway.ky.gov/eForms).

Design Capacity	Design capacity i	in gallons per min	ute as last approved	by the Cabinet
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- **Type of Filtration**Type of media (i.e. dual media, mixed media, slow sand, rapid sand,
etc.)
- **Design Filtration Rate** Filtration rate in gallons per minute per square foot as last approved by the Cabinet
- **Percent Backwash** Auto-fills from P4 Filters; not editable
- Settling Basins List the basin number and date last cleaned

Signature Because this MOR must be submitted in electronic, Excel format, it must be signed electronically (e-signed). There are two options:

1. Right click in the signature box at the bottom of the page, near the 'X'. Select 'Sign' from the dropdown menu that appears. Then, type your name into the box shown.

I certify under penalty of law that I have personally examined and am familiar with the immediately responsible for obtaining the information, I believe the submitted informati penalties for submitting false information, including the possibility of fine and imprison statute and regulation may include fines up to \$25,000 per violation or by imprisonment	information submitted herein. Based on my inquiry of those individuals ion is true, accurate and complete. I am aware that there are significant ment. See KRS 224.99-010 and 401 KAR 8:020. (Penalities under this nt for not more that one year, or both).
	Sign ? ×
1. Right click here	See additional information about what you are signing
<u>×</u>	Before signing this document, verify that the content you are signing is correct.
	Type your <u>name below</u> , or click Select Image to select a picture to use as your signature:
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	
	X 3. Type name here Select image.
	2. Change 'detail if needed
	To include information about the signer, click the details button

- 2. Insert an image of your signature on the line at the bottom right corner of the MOR, and type the date. Here are the steps:
 - a. Click in the cell you want to insert the image (it should be 'highlighted' with a green box around it).



ATTACH SIGNATURE AND TYPE DATE HERE IF USING VERSIONS OF EXCEL THAT DON'T SUPPORT SIGNATURE FEATURE

b. From the 'Insert' menu, choose 'Pictures' and select 'Place in cell'. Then, go to your files to select the image of the signature you want to use.



c. Type the date into the box next to the signature.

P1 - Chemicals

Raw Water Treated	Amount of raw wate water pumped to th source water collect	er treated in gallons – Thi ne distribution system; thi ted and treated each day.	s is <u>NOT</u> the finished is is the amount of
Hours Plant Operated	Number of hours pla Important: If a pla given day, type '0' f	ant was operating and tre ant was not operating or s for that day.	eating water. supplying water on a
Chemicals Added	The CHEMICAL, BRAND NAME, and CHEMICAL FORM sections are important to report so DOW can provide troubleshooting support as needed.		
		TYPE IN CHEMICAL	
		TYPE IN BRAND NAME	
		CHOOSE CHEMICAL FORM	
		% ACTIVE INGREDIENT	

Chemical Select from the drop-down list the name of the chemical added (e.g., ferric sulfate, sodium hypochlorite, etc.)

LBS

PPM

- **Brand Name** List the trade name or brand name of the product used. This is important because some brands use slightly different formulas or concentrations of the same chemical.
- **Chemical Form** Choose 'Solid,' 'Liquid,' or 'Gas' from the drop-down menu.
- **% Active Ingredient** The number reported in `% ACTIVE INGREDIENT' will be used in calculating the correct parts per million (PPM).

Example: If the product label states 12.5% active ingredient, type **12.5** in this area.



If the utility adds a pure chemical (100% active ingredient) or calculates the pounds of active ingredient <u>before</u> entering the pounds on the form, then type "100" in the '% ACTIVE INGREDIENT' line.

Note: if there is more than one ACTIVE INGREDIENT, contact the regional Technical Assistant (TA) for assistance on entering data correctly.

LBS Total pounds of chemical/product used each day (as described above)

PPM Parts per million = mg/L –The worksheet auto-calculates based on the pounds of chemical added, the gallons of raw water treated, and the percent active ingredient, using the formula:

<u>lbs. chemical * (% active ingredient/100)</u> (gal. raw water treated/1,000,000/8.34)

Note on disinfectant: Please report all chlorine dioxide additions on P6 Chlorine Dioxide – it is no longer necessary to report chlorine dioxide on the Chemicals page.

The table will automatically calculate the column totals, column averages, and find the maximum daily volume of raw water treated.

** For any extra data, including chemicals not listed on this page, please use the "OTHER" columns at the end of the table, and format as needed.

A note on phosphate as a corrosion inhibitor vs. a sequestrant:

Phosphate in different forms can be used either as a corrosion inhibitor OR a sequestrant, and should be reported in the appropriate column as such:

- Orthophosphate is a corrosion inhibitor –this is used to reduce the likelihood of lead and copper from getting into customers' tap water. At pH ranges of 7.2-7.8 in finished water, orthophosphate residual concentrations should be 0.33-1.0 ppm as P at the plant tap. Water systems with lead service lines may need to aim for residual concentrations of 1-1.2 ppm as P.
- Polyphosphate is a sequestrant. Polyphosphates alone can increase the amount of lead or copper in the customer's tap water. Polyphosphates are used to control the amount of iron, manganese, or aluminum in finished water.
- Blended phosphates (orthophosphate blended with polyphosphate) can be used both as corrosion control and a sequestrant of iron and manganese, but may not be as effective for lead scale as orthophosphate. If using blended phosphates for corrosion control for lead, there should be a minimum orthophosphate concentration of 0.5 ppm as P in the finished water. This can be accomplished by using a blended phosphate chemical made up of at least 30% orthophosphate.
- For more information: EPA Office of Water (2016). Optimal Corrosion Control Treatment Evaluation Technical Recommendations for Primacy Agencies and Public Water Systems. EPA 816-B-16-003.

Water systems should work with their <u>regional TA</u> to verify the water quality data they are required to collect.

Please fill in the yellow boxes at the bottom of the page:

If the water system uses groundwater and is required to maintain a specific minimum disinfectant residual based on 4-log C-T results, list the required minimum residual here (ppm):

Does the water system use Chloramines for disinfectant? (Y/N)

- **pH** Record pH measured at each of the required locations. Note: not all water systems are required to measure pH at each location; contact the <u>regional TA</u> with questions.
- **Total Alkalinity** Record alkalinity of raw water and finished water (at plant tap) daily
- **Total Hardness** Record hardness of raw water and finished water (at plant tap) daily

Chlorine Residual Record chlorine residual from top of filter.

<u>Chlorine systems:</u> required to record the free chlorine residual in the 'FREE' columns; it is optional to also record the TOTAL chlorine.

<u>Chloramine systems:</u> required to report chlorine residual in the 'TOTAL' columns; it is optional to also record the FREE chlorine.

<u>Small groundwater systems:</u> Only groundwater systems serving less than 3,300 that do not have an online chlorine analyzer at the plant tap should fill out the chlorine residual 'Plant Tap' section. All other systems use the yellow 'Lowest Daily Chlorine Residual: Plant Tap On-Line Chlorine Analyzer' columns.

CHLORIN <mark>E RESIDUAL</mark>				
TOP OF FILTER		PLANT TAP (SMALL GW SYSTEMS ONLY)*		
TOTAL	FREE	TOTAL	FREE	

Turbidity (NTU)Record daily turbidity measurements from the raw, settled, and plant
tap (finished) water.

Iron, Manganese, Phosphate

Record these from raw water and finished water (at plant tap) on each day of operation.

Lowest Daily Chlorine Residual

<u>If using an on-line chlorine analyzer</u>: Record the lowest daily disinfectant residual entering the distribution system (at plant tap) from the recorded data on the on-line chlorine analyzer.

<u>If NOT using an on-line chlorine analyzer</u>: record the lowest grab sample value of disinfectant residual entering the distribution system (at plant tap) each day.

Log Inactivation (CT) Report the calculated log inactivation (CT).

Rainfall Total rainfall recorded for each day

Water Temperature Record daily water temperature; choose "F" for Fahrenheit or "C" for Celsius. For the purposes of other calculations, it is preferred to report temperature in 'C'.

The table will automatically count/calculate:

- The average value for each column
- The minimum plant tap chlorine level recorded that month
- The number of readings reported for free and total chlorine
- All values less than 0.2 mg/L (free chlorine) or less than 0.5 mg/L (chloramines)
- Total rainfall for the month

P3 – Turbidity

This page is divided into 3 tables:

• COMBINED FILTER EFFLUENT 4-HOUR TURBIDITY READINGS

• Required for surface water treatment plants and recommended for ground water treatment plants

• INDIVIDUAL FILTER EFFLUENT TURBIDITY DAILY MAXIMUM

• Required for surface water treatment plants that have 3 or more individual filters; optional for all other treatment plants

• SEDIMENTATION BASIN EFFLUENT DAILY MAXIMUM

• Required for surface water treatment plants enrolled in the Area-Wide Optimization Program (AWOP); optional for others.

Answer the Y/N questions at the bottom of the sheet about Filtration Type:

Filtration type:	Conventional	N	Diatomaceous earth	
(choose Y or N for each)	Direct	Y	Slow sand	
Alternative Filtration: (Choose 'Y' if using alternative filtration instead of a standard filtration type)				

COMBINED FILTER EFFLUENT (CFE) 4-HOUR TURBIDITY READINGS table

Hours Plant Operated Auto-populates from P1 Chemicals

CFE Turbidity Samples Req'd

This column auto-calculates the minimum number of turbidity samples the water system is required to collect, based on the number of hours the plant operated.

Turbidity columnsRecord the turbidity measured during each time of day.
Report at least as many measurements as listed in column C -
CFE Turbidity Samples Req'd - (e.g., if column C states that
there are 4 CFE Turbidity Samples Req'd, then record data in
at least 4 of the CFE turbidity columns. Column C won't show
the correct number until the 'Hours Plant Operated' column on
P1 Chemicals is filled out).

|--|

Daily MaximumThis column auto-populates with the highest level of CFE
turbidity reported each day.

Below the CFE Turbidity table are several fields:

` Total ' fields (Row 35):	auto-calculate the total hours the plant operated, the total
	number of CFE turbidity samples required that month, and the
	total number of CFE turbidity samples reported on the MOR.
	Also in this row, the last cell finds the maximum turbidity
	value recorded in the month.

Total	0.0	0	Total # of CFE turbidity samples reported in month:	0	0.000
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`Number of samples exceeding' fields (Rows 38 and 39): these fields auto-count the number of samples that exceed each of the threshold values listed.

Number of samples exceeding:	0.1 NTU	0	0.3 NTU	0	1 NTU	0
For slow sand filtration, the	e number of	f samples				
	ex	ceeding:	1 NTU	0	5 NTU	0

INDIVIDUAL FILTER EFFLUENT (IFE) TURBIDITY DAILY MAXIMUM table

Filter Number columns Report the maximum turbidity recorded at each filter each day. Fill out one column for each filter in the water system. For example, if there are 6 filters, fill out columns #1 – #6. You may change the Filter Number shown in Row 3, if needed.

Red text: the value entered in this table will turn red if IFE turbidity exceeds 0.1; it will be red inside a pink cell if it exceeds 0.499. This is a warning that the water system may

need to make some treatment adjustments to reduce turbidity.

DAY				
DAY	#1	#2		
1	0.20	0.10		
2	0.10	0.60		
3	0.09	0.09		
4				

At the bottom of the IFE Turbidity table is a row (Row 35) that auto-calculates the average monthly turbidity for each filter.

AVG.							
	_						

Below the IFE Turbidity table is a section for systems that were classified as Bin 2 or higher based on Cryptosporidium testing for the Long Term 2 Enhanced Surface Water Treatment Rule (aka: LT2). Only those treatment plants that are **Bin 2, 3,** or 4 and chose the CFE Filter Performance Toolbox Option must fill out this section. Select Y or N in the first, bright yellow box; the remaining cells auto-calculate, based on what is entered in the CFE Turbidity table. These systems must also complete P8 LT2 Bin2.

LT2 ESWTR Bin 2, 3, or 4	Is this system classified in Bin 2 (or higher) under the Long Term 2 Enhanced Surface Water Treatment Rule (required treatment or turbidity control for Cryptosporidium)?	Y
Systems using turbidity	% of CFE samples exceeding 0.15 NTU (based on number of CFE turbidity samples reported on this page, cell I35)	0%
toolbox options only:	Were the combined filter effluent (CFE) turbidity levels less than or equal to 0.15 NTU in at least 95% of the 4-hour CFE measurements taken each month?	Yes

SEDIMENTATION BASIN EFFLUENT DAILY MAXIMUM table

Scroll to the right on **P3 Turbidity** to get to this table. This table is required for water systems participating in the AWOP; however, other systems may fill it out if desired.

RAW column Auto-populates from the raw water turbidity reported on P2 Water Quality.

Sedimentation Basin # columns

Report the turbidity recorded in each sedimentation basin daily.

At the bottom of the Sedimentation (sed) Basin Effluent table is a row that auto-calculates the average turbidity for each sed basin.

AVG		
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Page 3A – Individual Filter Effluent Turbidity Exceedance

Surface water treatment plants will use this page only when there is a turbidity exceedance at one or more of the individual filters. Review the list of 'Trigger Levels' at the bottom of this sheet for information about when to use this page.

Page 4 – Filters									
No.:	Type in the filter number as designated by the plant								
Area (sq. feet)	Type in the area	Type in the area of the filter in square feet							
	No: type-in								
	AREA (sq. feet):	type-in							
	WASHWATER GALLONS	FILT RUN HRS							
Washwater Gallons	For each day filte gallons used to t table, the sum (t entered for each	ers are back backwash ea total) and av filter will be							
Filter Run Hours	Enter the daily c service	umulative n							

At the bottom of the FILTER OPERATION table are two rows that auto-calculate the Total and Average of each column.

TOTAL	0			
AVG.				

The total washwater gallons (cell B36) is used to auto-calculate the 'percent backwash water used' reported on the Cover Sheet.

P5 – Disinfectant Residual

This page is to record disinfectant in the distribution system.

Chlorine Booster

Pounds of chlorine added as a booster each day used. Report all in the left column (this can be a sum of all booster stations). Use the right column if you'd like to report the first and second (if only two) chlorine boosts in a day.



Test Results: Total/Free Chlorine Residual

Record results of disinfectant residual samples taken each day at representative points throughout the distribution system. Record in the FREE column if the utility uses chlorine; record in the TOTAL column if the utility uses chloramine. Utilities may record in both the TOTAL and FREE columns if desired. At least one sample must be taken and recorded each day; however, some systems must record 4 samples each day.

NOTE: Utilities should collect samples at varying points throughout the 4 quadrants of the distribution system. Sampling points should be rotated through different points throughout the four quadrants of the distribution system. Collecting samples at the same location each day will not provide a representative assessment of the residual disinfectant throughout the entire distribution system **and could result in a violation**.

	TEST RESULTS												
TOTAL (T) AND FREE (F) CHLORINE RESIDUAL (ppm) Report 3-digit sample point # when relevant.													
	NORTH			SOUTH			EAST			WEST			
Sample	Sample Sample Sample Sample												
Pt#*	TOTAL	FREE	Pt#	TOTAL	FREE	Pt#	TOTAL	FREE	Pt#	TOTAL	FREE		

Sample Pt #

When disinfectant residual samples are collected at designated Sampling Points (e.g., at RTCR sample points), record the Sample Point Number (aka "Location Code") in the appropriate columns. Note that it is acceptable for disinfectant residual samples to be collected at points other than designated Sampling Points; in these cases, leave the 'Sample Pt #' cell blank. The table will automatically calculate the column totals, averages, and find the minimum chlorine residuals at each location for the month.

At the bottom of the table, you will see that the number of free and total residuals is counted automatically, as well as the number <0.2 mg/L (or <0.5 mg/L if using chloramine).

Average booster:		Average daily residual disinfectant:				\backslash						\geq		
Total booster:		Minimum total disinfectant:				/			7					
		Minimum free disinfectant:				/			/			$\overline{)}$		
# Days in operation:		Total # Chlorine Samples:		0	0	/	0	0	/	0	0		0	0
	# le	ss than 0.2 mg/L (free) or 0.5 mg/L (total):		0	0	/	0	0	/	0	0		0	0
Number of Free Residuals:		0	Minimum Monthly Free Residual:			0.00	Total # less than 0.2 mg/L:			0				
Number of Total Residuals:		0	Minimu	ım Monti	nly Total F	Residual:	0.00			Total # le	ess than ().5 mg/L:	0	

NEW: Distribution-only systems (i.e., purchasing systems): Add the '# Days in **operation**' in the yellow box on this page. For producing systems/treatment plants, this number is auto-filled from P1: Chemicals.

P6 – Chlorine Dioxide

If chlorine dioxide is used as a disinfectant, it is required that chlorite and chlorine dioxide tests be performed at the plant tap on each day that chlorine dioxide is used.

Chlorine Dioxide (ClO₂) added:

Report the number of pounds of chlorine dioxide added each day. Calculate the actual pounds of pure chlorine dioxide before entering the number on this sheet (for example, if the solution is 0.3% ClO₂, multiply 0.003 **x** #pounds of solution). The PPM column will auto-calculate based on the pounds entered and the gallons of raw water reported on P1 Chemicals.

Samples taken at the EPTDS daily:

Report the plant tap sample results for chlorine dioxide and chlorite in their respective columns. The daily test and additional testing can be run using either amperometric titration (chlorite or chlorine dioxide) or DPD titration (chlorine dioxide).

MRDL / MCL Exceedance:

These columns auto-fill with Y or N based on the value
entered in the column to the left of it. MRDL = maximum
residual disinfectant level; MCL = maximum contaminant level
MRDL: chlorine dioxide = 0.8 mg/L
MCL: chlorite = 1.0 mg/L

Bottom of sheet: Tables with information about compliance and required monitoring frequency is provided

Additional chlorine dioxide monitoring table

Any exceedance of the MRDL for chlorine dioxide (chlorine dioxide >=0.8 mg/L at the plant tap/EPTDS) with NO booster chlorination requires additional follow-up monitoring at the customer closest to plant tap. Samples must be collected in the first hour, the 6th hour, and the 12th hour after the MRDL exceedance. Report results in this table.

Additional chlorine dioxide/booster or chlorite monitoring table

Any exceedance of the MRDL for chlorine dioxide (chlorine dioxide >=0.8 mg/L) WITH booster chlorination requires additional follow-up monitoring at each of these three points (one sample each): as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system). Report results in this table.

This table should also be used if there is an exceedance in the MCL of chlorite (chlorite >=1.0 mg/L). Within 24 hours of the MCL exceedance, take three chlorite distribution system samples at the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system). Report results in this table.

Optional CT Table:Bin 2, 3, or 4 systems only: Column O on this page ('Optional
for 1-log LT2 cr.: CT (minutes)') is available for any system
that is classified as Bin 2, 3, or 4 for Cryptosporidium risk.
With prior approval from DOW, Bin 2, 3, or 4 systems could
use chlorine dioxide contact time (CT) to achieve 1-log credit
per 40 CFR 141.721(f)(13). This column uses water
temperature data from P1 Chemicals to calculate the CT
required to receive the credit. Temperature must be reported
in degrees Celsius for accurate calculation of CT on this page.

P7 – Fluoride

This is a new page added to the 2025 MOR. Fluoride reporting has been removed from the Chemicals and Water Quality pages and consolidated on this new page.

Reporting Fluoride: All systems required by DPH to add fluoride (see 902 KAR 115.010)

FLUORIDE
TYPE IN BRAND NAME
Select fluoride chemical:

Brand Name Type in the Name Brand of the fluoride chemical used in your facility (cell B2)

Fluoride Chemical From the drop down, choose "Sodium Fluoride-Saturator", "Sodium Fluoride-Dry system", "Sodium Fluorosilicate", or "Hydrofluorosilicic Acid-HFS"

- Sodium Fluoride-Saturator- Used for saturator systems, both up flow and downflow saturators
- *Sodium Fluoride-Dry system-* Used for dry hopper systems that utilize sodium fluoride
- *Sodium Fluorosilicate* Used for dry hopper systems that utilize sodium fluorosilicate
- *Hydrofluorosilicic Acid-HFS* Used for systems that utilize hydrofluorosilicic acid

Sodium Fluoride-Saturator Systems

DAY	Sodium Fluoride	e-Saturator	WATER A RESU	Sodium	
	LBS	GALLONS (for Saturators only)	RAW	ТАР	Fluoride (Saturator - see below)
1					

- **LBS** Type in the amount of Sodium Fluoride in pounds added to the saturator. Only type in the amount on days sodium fluoride was added.
 - **Example:** If 20 lbs were added on the 5th of the month and another 24 lbs were added on the 20th of the month, and nothing was added to the saturator any other day of the month, you would put "20" in cell B9 and "24" in cell B24. No other cells would have data included in them for that month.
 - GallonsType in the number of gallons of saturated solutions that has
gone through the saturator over a 24- hour period.

NOTE: An approved and calibrated water meter is required to be utilized to collect this data.

Water Analysis Results:

RAW	Type in the local daily fluoride analysis results for the raw water source to identify the natural fluoride ion concentration.
ΤΑΡ	Type in the local fluoride analysis results daily for the finished water source to identify the adjusted fluoride ion concentration.
Sodium Fluoride	This column (column F) will automatically populate with the expected fluoride ion concentration based on the data provided.

NOTE: The fluoride concentration is calculated based on the number of gallons of solution fed from the saturator (cells C5-C35), a saturated solution of 18,000 ppm, and the production of water (P1 Chemicals, cells B13-B43). Refer to the Centers for Disease Control and Preventions (CDC's) formula at the bottom of the sheet.

Sodium Fluoride-Dry Hopper Systems

DAY	Sodium Fluoride	e-Dry system	WATER ANALYSIS RESULTS:		Sodium	
	LBS		RAW	ТАР	Fluoride (Dry system)	
1						

Type in the amount of sodium fluoride in pounds added from the dry hopper to the mixing tank for each 24-hour period. This is the exact amount of sodium fluoride used in pounds.

Water Analysis Results:

LBS

RAW	Type in the local daily fluoride analysis results for the raw water source to identify the natural fluoride ion concentration.
ТАР	Type in the local fluoride analysis results daily for the finished water source to identify the adjusted fluoride ion concentration.
Sodium Fluoride	This column (column G) will automatically populate with the expected fluoride ion concentration based on the data provided.
	NOTE: The fluoride concentration is calculated based on the number of pounds of sodium fluoride fed (cells B5-B35), the available fluoride ion concentration (AFI) of the sodium fluoride, the purity of the sodium fluoride, and the production of water (P1 Chemicals, cells B13-B43). Refer to the CDC's purity/AFI table and formulas at the bottom of the fluoride page.

Sodium Fluorosilicate-Dry Hopper Systems

DAY	Sodium Fluorosi	dium Fluorosilicate WATER ANALYSIS RESULTS:				Fodium
	LBS		RAW	ТАР		Fluorosilicate
1						

LBS

Type in the amount of sodium fluorosilicate in pounds added from the dry hopper to the mixing tank for each 24-hour period. This is the exact amount of sodium fluorosilicate used in pounds. Water Analysis Results:

RAW	Type in the local daily fluoride analysis results for the raw water source to identify the natural fluoride ion concentration.
ТАР	Type in the local fluoride analysis results daily for the finished water source to identify the adjusted fluoride ion concentration.
Sodium Fluorosilicate	This column (column H) will automatically populate with the expected fluoride ion concentration based on the data provided.
	NOTE: The fluoride concentration is calculated based on the number of pounds of sodium fluorosilicate fed (cells B5-B35), the available fluoride ion concentration (AFI) of the sodium fluorosilicate, the purity of the sodium fluorosilicate, and the production of water (P1 Chemicals, cells B13-B43). Refer to the CDC's purity/AFI table and formulas at the bottom of the fluoride page.

Hydrofluorosilicic Acid (HFS) Systems

	TYPE IN BRAND N	NAME			CALCU	LATED AVA	ILABLE FLU ATION (PPM	ORIDE)
DAY	Hydrofluorosilic	ic Acid-HFS	WATER ANALYSIS RESULTS:					
	LBS		RAW	ТАР				HFS
1								

LBS

Type in the amount of HFS in pounds added from the day tank for each 24-hour period. This is the exact amount of HFS used in pounds.

Water Analysis Results:

RAW	Type in the local daily fluoride analysis results for the raw water source to identify the natural fluoride ion concentration.
ТАР	Type in the local fluoride analysis results daily for the finished water source to identify the adjusted fluoride ion concentration.
HFS	This column (column I) will automatically populate with the expected fluoride ion concentration based on the data provided.
	NOTE: The fluoride concentration is calculated based on the number of pounds of HFS fed (cells B5-B35), the available fluoride ion concentration (AFI) of the HFS, the purity of the HFS, and the production of water (P1 Chemicals cells B13-B43). Refer to the CDC's purity/AFI table and formulas at the bottom of the fluoride page.

Certified Lab Results- For All Systems

CERTIFIED LAB RESULTS (from DPH Form 505A) (The certified lab analysis should be between 0.60 and 1.20 ppm)					
Local Analysis (PPM)	Certified Lab Analysis (PPM)				

NOTE: The point of maximum retention is defined as: "The location(s) in the distribution system where water sits undisturbed the longest (i.e., where water age is highest)." In order to meet these requirements, our general guidance to facilities in the past has been to collect a fluoride sample from an identified 'bact' (RTCR) site located at one of the farthest points from the plant's distribution system.

Local Analysis (PPM) Type in the local analysis results for the split fluoride samples that are submitted to a certified lab twice a month from the plant tap during the first week of the month (1st-7th) and the distribution during the third week of the month (15th-21st) from a point of maximum retention.

NOTE: These data are only included on days that samples were collected. If the plant tap sample was collected on the 1st of the month with a local analysis result of 0.81 ppm, you should type "0.81" in cell J5. If the distribution sample was collected on the 18th of the month with a local analysis result of 0.86ppm, you should put "0.86" in cell J22. No other cells should have data in them for that month.

Certified Lab Analysis Type in the certified lab analysis results for the split fluoride samples that are submitted to a certified lab twice a month. The first, from the plant tap, during the first week of the month (1st-7th) and the second, from the distribution, during the third week of the month (15th-21st) from a point of maximum retention.

NOTE: These data are only included on days that samples were collected. If the plant tap sample was collected on the 1^{st} of the month with a certified lab analysis result of 0.75 ppm, you should type "0.75" in cell K5. If the distribution sample was collected on the 18^{th} of the month with a certified lab analysis result of 0.80 ppm, you should put "0.80" in cell K22. No other cells should have data in them for that month.

P8 – LT2 Bin2

This page is for systems that were deemed to be in Bin 2 or higher based on Cryptosporidium testing for the Long Term 2 Enhanced Surface Water Treatment Rule (aka: LT2). Only those systems that are classified as **Bin 2, 3, or 4** that chose the following Microbial Toolbox options (see 40 CFR 141.715) must fill out this page (all options must be pre-approved by DOW):

- Presedimentation basin with coagulation
- Combined filter performance

- Individual filter performance
- Chlorine dioxide

Use data from P3 Turbidity or P6 Chlorine Dioxide to complete this page. Answer any other questions as appropriate for conditions at the utility in the given month. For assistance, contact the regional TA.

P9 – UV

This page is for systems that were deemed to be in Bin 2, 3, or 4 based on Cryptosporidium testing for the Long Term 2 Enhanced Surface Water Treatment Rule (aka: LT2). Only those systems that are **Bin 2, 3, or 4** that chose to use the 'UV Treatment Toolbox Option' are required to fill out this page. For assistance, contact the regional TA.

P10 – Membrane Filters

This page is for water systems with membrane filtration systems. Enter the daily maximum membrane pressure decay test (PDT) and trans-membrane pressure (TMP) for the units used. In addition, enter the PDT and TMP upper control limits in the yellow cells at the bottom of the sheet.

Return to Bookmarks	MEMBRANE FILTRATION						
	Unit	1	Unit	2	Unit 3		
	Max Mem. PDT	Max TMP	Max Mem. PDT	Max TMP	Max Mem. PDT	Max TMP	
DAY	psi/min Max	psi/min Max	psi/min Max	psi/min Max	psi/min Max	psi/min Max	
1							
2							PDT Upper Control Limit:
3							TMP Upper Control Limit:

P11 – Clarifiers

This page is a worksheet for water treatment plants using contact clarifiers – it can be used to record the daily rinse water used for each clarifier. It is optional.

P12 – Water Loss

This is an optional page that can help water systems detect and track water loss issues. Several sections are auto-filled from other pages, or are auto-calculated:

- Total water treated (P1)
- Water purchased (Purchase Sale Worksheet)
- Total Water Treated + Purchased (auto-calculates from the above two columns)
- Filter Washwater (P4)
- Clarifier Rinsewater (P11)
- Loss Unknown reason (auto-calculates from several columns on this page)
- Total Water Loss (auto-calculates)
- Water Sold: Wholesale (Purchase Sale Worksheet)
- Total Water Sold (auto-calculates)
- Calculations columns (auto-calculates)

For the most accurate calculation of water loss, it is necessary to accurately fill out other pages of the MOR and to fill out the optional Purchase Sale Worksheet. For more information about water loss planning, visit these resources:

- Public Service Commission (PSC) information sheet
- PSC <u>water loss and use calculations</u> (see reference materials in the 'Water' tab on their webpage)
- Kentucky Rural Water Association <u>water accountability report</u>
- EPA Water Audits and Water Loss Control for Public Water Systems

Plant Summary Sheet

All water systems with a water treatment plant must complete this page.

Most fields on this page will be automatically populated after completing the rest of the MOR. Check for accuracy and make corrections to other pages as needed. <u>Complete the fields highlighted in yellow</u>.

Individual Filter Effluent Turbidity (All surface water plants with filtration) Answer all questions in this section with Y or N.

Combined Filter Effluent Turbidity (*All plants with filtration*) Indicate whether at least one sample of the combined filter turbidity was taken and recorded for every 4 hours the plant was in operation with Y or N. In addition, select Y or N in the yellow boxes about notifying the state, when relevant.

Entry Point Residual Disinfectant (*All plants*) If the EPRD was less than required for anyone reading, was the residual restored within 4 hours of operation? Answer Y or N

Chlorine Dioxide at Entry Point (All plants using Chlorine Dioxide)

Chlorite at Entry Point (All plants using Chlorine Dioxide)

Additional Turbidity Reporting Required by LT2 ESWTR

(Bin 2, 3, or 4 surface water systems monitoring turbidity) Note the second two questions – if the answer is 'Yes', complete P3A – Individual Filter Turbidity Exceedances.

Summary Sheet

All water systems must complete this page.

PurchasedRecord the PWSID # of the water system that water was
purchased from and the total amount purchased. (State codes
may be KY, OH, WV, or TN). Do NOT include any letters or
abbreviations indicating the name of the system. Only include
9 digits total (2-letter state code + 7 numbers).

Record the number of gallons purchased from each water system listed.

SoldRecord the PWSID # of the water system that water was sold
to and the total amount sold. (State codes may be KY, OH,
WV, or TN.) Do NOT include any letters or abbreviations
indicating the name of the system. Only include 9 digits total
(2-letter state code + 7 numbers).

Record the number of gallons sold to each water system listed.

(This does <u>not</u> refer to selling water to customers in your own distribution system).

Distribution Residual Disinfectant

(*All water systems*) At bottom of sheet: This section will autofill from P5: Disinfectant Residual. Check for accuracy, and make corrections to P5 as needed.

Purchase Sale Worksheet

Water systems can use this optional worksheet to record the daily purchases and/or sales to other water systems; this enables easy summarization onto the Summary Sheet for final submission.

			PURCHASED or S	OLD WATER VOL	UME			
	Total	Total Sold	Type CC PWSID here		Type CC PWSID here		Type CC PWSID here	
DAY	Purchased		Purchased gallons	Sold gallons	Purchased gallons	Sold gallons	Purchased gallons	Sold gallons
1	0	0						
2	0	0						

Comments

Use this sheet to submit any comments about unusual conditions that occurred during the month.

Annual Data

* This page must be filled out and sent only one time per year with the December MOR.

List the total number of meters for the applicable type(s).
Total population within the distribution system. Use either of the following to obtain the system population (401 KAR 8:200 Section 3):

• Multiply the number of service connections by 2.69

Consecutive System Populations

Systems who sell water to other distribution systems, enter the PWSID for the system **sold to** and the number of meters served water from your system.

Total Population Served in Consecutive Systems

	Total population of the areas within each of the distribution systems that are served the sold water.
Contact Information	Current or updated contact information for each of those persons listed. Be sure to fill out each line.
Water Sold	Total residential gallons sold in current year.
	Total commercial gallons sold in current year.
	Total industrial gallons sold in current year.
	Total wholesale gallons sold in current year.

Appendix A: Microsoft Excel Basics



Appendix B: Troubleshooting eForm 169 Error and Warning Messages

Page	Section on Page	eForm Error or Warning Message	Troubleshooting - How to Correct the Issue	Impacted System Types
	* Yellow cells refe	r to errors that must be fixed before you	will be able to submit the MOR.	
Cover Sheet and Comments Page	"Was plant operating this month?" (cell F6)	Please provide comment on Comments page explaining why plant was not operating this month.	Treatment Plants: select Yes or No from the dropdown menu in cell F6 on the Cover Sheet, which asks: Was plant operating this month? Purchase/distribution only systems: Leave this cell blank.	Treatment plants only
Cover Sheet	PWSID	The PWSID you have provided is not currently active. Please verify you have the correct PWSID before submitting your excel spreadsheet.	The PWSID in cell E11 on the Cover Sheet is either missing doesn't match what was entered at the top of the eForm. Check to see that cell E11 is filled in correctly. eForm 169 will not allow uploading if the PWSID on the MOR doesn't match the PWSID entered on the eForm.	All systems
Cover Sheet	PWS Name	Incomplete section. You are required to enter the PWS Name (CoverSheet E12).	Be sure to enter the name of the water system in cell E12 on the Cover Sheet. The format that the name is typed in is not critical.	All systems
Cover Sheet	Source Name(s)	Incomplete section. You are required to enter the Source Name(s) (CoverSheet E14:E17).	Be sure to enter at least one water source in the Source Name section (starting with cell E14) on the Cover Sheet. The format the name is typed in is not critical.	All systems
Cover Sheet	AI	Incomplete section. You are required to enter the Agency Interest (AI) (CoverSheet E13).	Enter the Agency Interest (AI) number in cell E13 on the Cover Sheet. This can be found in the top right corner of eForm 169 (after entering the PWSID on the eForm).	All systems

Page	Section on Page	eForm Error or Warning Message	Troubleshooting - How to Correct the Issue	Impacted System Types			
	* Yellow cells refe	/ellow cells refer to errors that must be fixed before you will be able to submit the MOR.					
Cover Sheet	"Operators in Responsible Charge" info Business hours (operators' names, class, license number)	List the Operator(s) in Responsible Charge during business hours. Also report Operator Class and Certification/License Number (CoverSheet E19, H19 and J19).	At least one operator must be listed next to the Business Hours section of the Operator(s) in Responsible Charge section. This message will appear if there is no operator name (cell E19), no operator class (cell H19), and no operator license number (cell J19) listed - all three fields are necessary. In addition, no special characters are allowed (e.g., no dashes, hyphens, or slashes: / \ -), and Roman numerals should not be used - use traditional numbers for the operator class. If an operator listed is an operator in training (OIT), then type 'Operator In Training' under the Class column.	All systems			
Cover Sheet	"Operators in Responsible Charge" info Emergency/After Hours (operators' names, class, license number)	List the Operator(s) in Responsible Charge during emergencies/after hours. Also report Operator Class and Certification/License Number (CoverSheet E23, H23 and J23).	At least one operator must be listed next to the After hours / Emergency section in the Operator(s) in Responsible Charge section. This message will appear if there is no operator name (cell E23), no operator class (cell H23), and no operator license number (cell J23) listed - all three fields are necessary. In addition, no special characters are allowed (e.g., no dashes, hyphens, or slashes: / \ -), and Roman numerals should not be used - use traditional numbers for the operator class. If an operator listed is an operator in training (OIT), then type 'Operator In Training' under the Class column.	All systems			

Page	Section on Page	eForm Error or Warning Message	Troubleshooting - How to Correct the Issue	Impacted System Types
	* Yellow cells refe	r to errors that must be fixed before you	will be able to submit the MOR.	
Cover Sheet	"Operators in Responsible Charge" info (operators' names, class, license number)	An operator listed on the CoverSheet of this MOR has not been filed with DOW as working for this water system. Please check that the operator license numbers are entered correctly. Only enter numeric digits for the Operator License Numbers or type 'Operator In Training'. Any new operators must be reported to DOW using eForm 136: Wastewater and Drinking Water Facility Update for Licensed Operators.	Compare the license numbers entered on the MOR to those listed in the 'Licensed Operators' document for that PWS in Tempo. Only verify if it is a valid drinking water licensed operator (Active and Expired), not accepting (Upgraded, Terminated, Revoked, Suspended). The 'Licensed Operators' document will also list an "Employment End Date"; it should be checked that there is no end date listed here. Note: a PWS can list the certification number as 'Operator in Training'.	All systems
Cover Sheet	Distribution Class	List the Distribution Class (CoverSheet G11).	Select a distribution classification in cell G11. Options are: 1D, 2D, 3D, or 4D.	All systems except bottled water
Cover Sheet	Month/Year	Enter the Month/Year (CoverSheet F8).	In cell F8, type in the month and year in MM/YYYY format.	All systems
Cover Sheet	System source type	Indicate the source type (e.g., GW, SW, etc.) (CoverSheet I5:19)	Type an X in the yellow box next to one of the source types on the top right of the Cover Sheet (cells I5:19). Choices are: Surface water, Ground water (with or without filtration), Ground water under the direct influence of surface water, and Purchase/distribute only.	All systems
Cover Sheet	Treatment Plant information (Plant Name)	Type in the Plant Name (CoverSheet J11).	Type the name of the treatment plant in cell J11 on the Cover Sheet. The format used is not critical.	Treatment plants only
Cover Sheet	Treatment Plant information (Plant Class)	Enter the Plant Class (CoverSheet J12).	Choose a plant classification from the dropdown menu in cell J12 on the Cover Sheet. Options are: 1A-4A (surface water plants), or 1B-4B (ground water plants).	Treatment plants only

Page	Section on Page	eForm Error or Warning Message	Troubleshooting - How to Correct the Issue	Impacted System Types
	* Yellow cells refe	r to errors that must be fixed before you	will be able to submit the MOR.	
Cover Sheet	Treatment Plant information (Plant ID)	Enter the Plant ID (CoverSheet J13).	Select from the dropdown menu in the Plant ID section on the Cover Sheet (cell J13). Plant ID is named after the treatment plant (TP), and choices are: TPA, TPB, TPC, or TPD. Most water systems only have TPA and/or TPB.	Treatment plants only
Cover Sheet	Treatment Plant information (Design Capacity)	Enter the Design Capacity (CoverSheet E31).	Type in the design capacity of the treatment plant in cell E31 on the Cover Sheet. It should be a number representing the capacity in million gallons per day.	Treatment plants only
Cover Sheet	Treatment plants complete' section	Enter the Type of Filtration Used (CoverSheet E32).	Type in the type of filtration used in cell E32 on the Cover Sheet. Format is not critical. Typical entries are Conventional, Direct, Membrane, etc.	Treatment plants with filtration only
Cover Sheet	Treatment plants complete' section	Enter the Design Filtration Rate (CoverSheet E33).	Type in the design filtration rate into cell E33 on the Cover Sheet. Format is not critical, but it should be a number representing the GPM per square foot.	Treatment plants with filtration only
Cover Sheet		An MOR for [PWSID] [Plant ID] has already been submitted for the [MMYYYY] compliance period. Only click "Submit to EEC" if it is intended to REPLACE a previous submission.	This message warns against resubmitting a duplicate MOR. Any resubmissions will override the previous MOR submitted to DOW for the same month and PWSID. Check that the date listed on the Cover Sheet is for the current month, and that the PWSID and Plant ID on the Cover Sheet are correct for the MOR you are submitting.	All systems
Cover Sheet		The MOR data has been entered into an old version of the MOR. Please use the version linked above.	Download the most current version of the MOR from the DOW webpage: www.tinyurl.com/DrinkingWaterCompliance	All systems
Cover Sheet		PWSID on the MOR Cover Sheet does not match the PWSID entered at the top of this eForm. Please ensure the correct MOR is uploaded.	Check that the PWSID reported on the Cover Sheet (cell E11) is the same as the PWSID that is filled in on the top of eForm 169.	All systems

Page	Section on Page	eForm Error or Warning Message	Troubleshooting - How to Correct the Issue	Impacted System Types
* Yellow cells refer to errors that must be fixed before you will be able to submit the MOR.				
Cover Sheet		Al number on the MOR Cover Sheet does not match the Al number entered at the top of this eForm. Please ensure the correct MOR is uploaded.	Check that the PWSID reported on the Cover Sheet (cell E13) is the same as the PWSID that is filled in on the top of eForm 169.	All systems
Summary Sheet	Purchased/Sold section	Purchasing systems must report at least one row with PWSID (Summary Sheet B4) and # gallons purchased (Summary Sheet D4).	On the Summary Sheet, fill out at least one PWSID of a water system and the number of gallons purchased in the PURCHASED WATER section.	Purchase-only systems
Summary Sheet	Purchased/Sold section	Check the PWSID of each water system listed on the Summary Sheet. PWSID [inset offending PWSID] listed there is not in the DOW database has having a consecutive connection with this water system. If a new consecutive connection exists, contact DOW at DrinkingWaterCompliance@ky.gov immediately. This must be corrected before uploading the MOR.	Check the PWSID number listed in the PURCHASED WATER or SOLD WATER sections of the Summary Sheet to ensure it is listed accurately. Any PWSID reported on this page should be on file with DOW. If purchases or sales were made to a new water system that you don't normally work with, notify DOW immediately. You will not be able to submit the MOR through the 'Monthly Operating Report' button on eForm 169 until all PWSIDs are correct and on file with DOW. You may still upload the MOR using the 'Upload File' button on eForm 169 until the situation is resolved.	All systems
Summary Sheet		Purchased and sold water data have already been submitted for this water system. Continuing to upload this MOR will overwrite existing purchase and sale data (Summary Sheet). Only click 'Submit to EEC' if it is intended to REPLACE previously-submitted purchase/sale data.	This warning happens if the PWS has already submitted an MOR with the same PWSID for that month and year. The eForm notices that the purchase and sale data (PWSID, gallons purchased or sold) reported on the Summary Sheet of this MOR are different than what was submitted before. Before uploading, be sure the date and PWSID on the CoverSheet of the MOR are correct, and be aware that any purchase and sale data reported in the previous MOR submission will be overwritten by this version.	All systems

Page	Section on Page	eForm Error or Warning Message	Troubleshooting - How to Correct the Issue	Impacted System Types	
	* Yellow cells refer to errors that must be fixed before you will be able to submit the MOR.				
Plant Summary Sheet	Individual Filter Effluent Turbidity	All the systems with 3 or more filters must fill out each yellow square in the Individual Filter Effluent Turbidity section (Plant Summary Sheet).	Every water treatment plant that has 3 or more filters must answer the Y/N questions in the top 'INDIVIDUAL FILTER EFFLUENT TURBIDITY' section of the Plant Summary Sheet. Enter Y or N in each yellow box. Exception: the fourth and fifth boxes on this section may be left blank if they do not apply.	Surface water and groundwater under the direct influence of surface water (GWUDI) treatment plants only	
Plant Summary Sheet	Combined Filter Effluent Turbidity (CFET section)	Answer the Y/N question in the Combined Filter Effluent Turbidity section (Plant Summary Sheet E34).	Enter Y or N in the yellow box next to the 'Were samples taken every 4 hours of plant operation?' question in the 'COMBINED FILTER EFFLUENT TURBIDITY' section of the Plant Summary Sheet.	Treatment plants with filtration only	
P3 Turbidity	Combined Filter Effluent 4-Hour Turbidity Readings table	Reported Combined Filter Effluent Turbidity level is high. Check reported values for accuracy (P3 Turbidity Columns D-I).	Values reported in the 'COMBINED FILTER EFLLUENT 4-HOUR TUBIDITY READINGS' table on P3 Turbidity will be flagged if they are higher than 1 NTU. If turbidity readings in this table are correct, then ignore this warning message. Otherwise, enter the correct value(s).	Treatment plants with filtration only	
P1 Chemicals	Raw Water treated, hours plant operated (columns B, C)	Report the gallons of raw water treated (P1 Chemicals, Column B) and the number of hours plant operated (P1 Chemicals, Column C) for each day of operation.	There must be data in the RAW WATER TREATED and HOURS PLANT OPERATED columns on P1 Chemicals. Enter data for each day of operation; some cells may be left blank if the plant was not operating that day.	Treatment plants only	
P1 Chemicals	Chemical information	For each chemical used report the chemical name, the form of the chemical and the % active ingredient of the chemical (P1 Chemicals, Rows 3, 5, and 6).	For any chemical column where 'LBS' of a chemical are reported, enter information into each of the yellow cells above it (chemical, brand name, chemical form, and % active ingredient)	Treatment plants only	

Page	Section on Page	eForm Error or Warning Message	Troubleshooting - How to Correct the Issue	Impacted System Types		
	* Yellow cells refe	Yellow cells refer to errors that must be fixed before you will be able to submit the MOR.				
P1 Chemicals	Disinfectant (Columns L-Q)	Report pounds of disinfectant added (P1 Chemicals, Columns L-Q).	At least one 'LBS' column among the three disinfectant columns (columns L-Q on P1 Chemicals) must have values in it, except for those treatment plants that only use chlorine dioxide (those should fill out P6 Chlorine Dioxide). Not all treatment plants need to fill out all 3 columns; work with your regional TA if you have questions.	Treatment plants only		
P2 Water Quality	pH columns	Report daily pH measurements (P2 Water Quality, column(s) B, C, and/or D).	Report data for each day in at least one of the pH columns (column B, C, or D).	Surface water and GWUDI treatment plants only		
P2 Water Quality	Chlorine residual (all columns)	Report total chlorine residual at plant tap (P2 Water Quality, Column K) for each day of operation.	Systems that use chloramines and checked Y in the yellow box next to the question 'Does the water system use Chloramines for disinfectant?' (cell O41) must add data to the 'CHLORINE RESIDUAL: PLANT TAP: TOTAL' column (column K) for each day of operation.	Treatment plants only		
P2 Water Quality	Chlorine residual (all columns)	Report free chlorine residual at plant tap (P2 Water Quality, Column L) for each day of operation.	Systems that use chlorine and checked N in the yellow box next to the question 'Does the water system use Chloramines for disinfectant?' (cell O41) must add data to the 'CHLORINE RESIDUAL: PLANT TAP: FREE' column (column L) for each day of operation.	Treatment plants only		
P2 Water Quality	Turbidity (all columns)	Report turbidity of raw and settled water and at plant tap (P2 Water Quality, Columns M, N, O) for each day of operation.	Fill out all three 'TURBIDITY (NTU)' columns (Columns M, N, O) for each day of operation. (Not all rows need to be filled, but there should be data in each column)	Treatment plants only		

Page	Section on Page	eForm Error or Warning Message	Troubleshooting - How to Correct the Issue	Impacted System Types
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P2 Water Quality	Lowest Daily Chlorine Residual Plant Tap On-Line Chlorine Analyzer	Report lowest daily chlorine residual as measured by the plant tap on-line chlorine analyzer (P2 Water Quality, Column X) for each day of operation. If no chlorine residual was measured on one or more days, please provide a comment on the Comments page.	Systems that use chloramines and checked Y in the yellow box next to the question 'Does the water system use Chloramines for disinfectant?' (cell O41) must fill out the 'Lowest Daily Chlorine Residual: Plant Tap On-Line Chlorine Analyzer: TOTAL' column (column X) for each day of operation	Surface water and GWUDI treatment plants only
P2 Water Quality	Lowest Daily Chlorine Residual Plant Tap On-Line Chlorine Analyzer	Report lowest daily chlorine residual as measured by the plant tap on-line chlorine analyzer (P2 Water Quality, Column W) for each day of operation. If no chlorine residual was measured on one or more days, please provide a comment on the Comments page.	Systems that use chlorine and checked N in the yellow box next to the question 'Does the water system use Chloramines for disinfectant?' (cell O41) must fill out the 'Lowest Daily Chlorine Residual: Plant Tap On-Line Chlorine Analyzer: FREE' column (column W) for each day of operation	Surface water and GWUDI treatment plants only
P2 Water Quality	Disinfectant chloramines question, Cell O41	Answer the Y/N question "Does the water system use Chloramines for disinfectant" (P2 Water Quality, O41).	Select Y or N in the yellow box next to the question: "Does the water system use Chloramines for disinfectant" (cell O41) at the bottom of the page.	Treatment plants only
P2 Water Quality		Check values entered for Lowest Daily Chlorine Residual: Plant Tap On-Line Chlorine Analyzer (P2 Water Quality, W5:W35). Reported values are low.	This error message is looking at two things: 1) that 'N' is entered into the yellow box next to the question 'Does the water system use chloramines for disinfectant?' (cell O41); and 2) whether the results reported in the FREE chlorine column of the 'Lowest Daily Chlorine Residual: Plant Tap Online Chlorine Analyzer' (column W) are less than the MRDL of 0.2 ppm. If there were free chlorine results less than 0.2 ppm, then ignore this message and upload the MOR. Otherwise, make any corrections needed and then submit.	Surface water and GWUDI treatment plants only

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P2 Water Quality		Check values entered for Lowest Daily Chlorine Residual: Plant Tap On-Line Chlorine Analyzer (P2 Water Quality, X5:X35). Reported values are low.	This error message is looking at two things: 1) that 'Y' is entered into the yellow box next to the question 'Does the water system use chloramines for disinfectant?' (cell O41); and 2) whether the results reported in the TOTAL chlorine column of the 'Lowest Daily Chlorine Residual: Plant Tap Online Chlorine Analyzer' (column X) are less than 0.5 ppm. If there were total chlorine results less than 0.5 ppm, then ignore this message and upload the MOR. Otherwise, make any corrections needed and then submit.	Surface water and GWUDI treatment plants only
P2 Water Quality		Ground water systems that provide 4-log disinfection must report lowest daily chlorine residual as measured by the plant tap on-line chlorine analyzer (P2 Water Quality, Column X) for each day of operation.	Ground water systems that use chloramines and serve over 3,300 people are required to report the lowest daily total chlorine residual as measured by a plant tap on-line chlorine analyzer for each day of operation. There should be data in column X on P2 Water Quality for each day of operation. If you believe this warning message is in error, check the response in the yellow box (cell O41) next to the question 'Does the water system use chloramines for disinfectant? (Y/N)' If 'Y' is in the box, this warning message may appear.	Groundwater treatment plants serving over 3,300 people only
P2 Water Quality		Ground water systems that provide 4-log disinfection must report lowest daily chlorine residual as measured by the plant tap on-line chlorine analyzer (P2 Water Quality, Column W) for each day of operation.	Ground water systems that use chloramines and serve over 3,300 people are required to report the lowest daily free chlorine residual as measured by a plant tap on-line chlorine analyzer for each day of operation. There should be data in column W on P2 Water Quality for each day of operation. If you believe this warning message is in error, check the response in the yellow box (cell O41) next to the question 'Does the water system use chloramines for disinfectant? (Y/N)' If 'N' is in the box, this warning message may appear.	Groundwater treatment plants serving over 3,300 people only

Page	Section on Page	eForm Error or Warning Message	Troubleshooting - How to Correct the Issue	Impacted System Types		
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P2 Water Quality	Plant tap on-line chlorine analyzer columns	Ground water systems that do 4-log disinfection must fill in the 'Plant Tap On- Line Chlorine Analyzer' columns (W or X) of P2 Water Quality.	This message appears for ground water systems that entered a number in cell O40 on P2 Water Quality (which asks, 'If the water system uses groundwater and is required to maintain a specific minimum disinfectant residual based on 4-log C-T results, list the required minimum residual here.'). It will appear if these water systems fail to report anything in the 'Plant Tap On-line Chlorine Analyzer' columns on P2 Water Quality. To correct, enter the correct residual disinfectant information in cell O40 and fill out at least one of column W or X.	Groundwater treatment plants only		
P3 Turbidity	CFE Turbidity Table	Insufficient number of turbidity readings reported (P3 Turbidity, Columns D-I).	In the COMBINED FILTER EFFLUENT 4-HOUR TURBIDITY READINGS TABLE on this page, the number of cells filled per day (i.e., per row) in columns D-I must be at least equal to the number listed in the '# CFE Turbidity Samples Req'd' column (column C). For example, if cell C4 = 3, you must report at least three CFE turbidity sample results in cells D4, E4, F4, or I4 (but there can be more than 3 cells filled).	Surface water and GWUDI treatment plants only		
P3 Turbidity	Filtration type	Please fill out the Y/N Questions about filtration type on P3 Turbidity (F36, F37).	You must answer Y or N in the yellow boxes next to Conventional and Direct filtration (cells F36 and F37). Do not leave them blank.	Surface water and GWUDI treatment plants only		
P3 Turbidity	IFE Turbidity Daily Maximum table	Check that the values listed for Individual Filter Effluent Daily Maximum on P3 Turbidity are reported correctly; reported turbidity values are high. If correct, proceed as-is.	If there are any values in the 'INDIVIDUAL FILTER EFFLUENT TURBIDITY DAILY MAXIMUM' table (columns M-AP) higher than 1.0, this message appears. Check the reported values and make any corrections that may be needed. If they are reported correctly, no change is needed; you may still submit an MOR even if IFE turbidity readings are 1.0 NTU or higher.	Surface water treatment plants serving 10,000 or greater populations		

Page	Section on Page	eForm Error or Warning Message	Troubleshooting - How to Correct the Issue	Impacted System Types
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P4 Filters		You must report filter washwater gallons and run hours for each filter (P4 Filters).	Fill out the 'FILT RUN HRS' for each filter for the days in operation (i.e., at least some run hours for at least one filter must be reported for each day the treatment plant reported hours of operation). Also report the number of gallons used in the appropriate WASHWATER GALLONS columns.	Surface water and GWUDI treatment plants only
P5 Disinfectant Residual	Test results columns	Report disinfectant residual measurements in the distribution system for each day of operation (P5 Dis. Residual, Columns E-P). If disinfectant residual samples were not collected from the distribution system, an explanation must be provided on the Comments page.	This message comes up whenever there are no chlorine (or chloramine) residual results posted on P5 Dis. Residual. To avoid this error, report the results of disinfectant residual sampling in the distribution system, for each day of operation. You may still upload the MOR even if no samples were collected, but you must provide an explanation about why on the Comments page.	Treatment plants only (except bottled water facilities)
P5 Disinfectant Residual		Report the days of operation on P5 Dis.Residual (cell B40).	On P5 Dis. Residual, be sure the number in the yellow square (cell B40) is accurate. Purchase-only systems must type the number of days they were in operation in this square. This square auto-fills from P1 Chemicals for treatment plants.	Treatment plants only (except bottled water facilities)
P5 Disinfectant Residual	Test results columns	Check that residual disinfectant levels are reported correctly. At least one reported value on P5 Dis. Residual is high. The maximum residual disinfectant level for chlorine and chloramine is 4.0 ppm. (P5 Dis. Residual, columns F-P).	Any sample result listed on P5 Dis. Residual that is greater than 4.0 ppm will lead to this error message. If there actually was a sample result greater than 4.0 ppm, then ignore this message and continue uploading the MOR. Otherwise, correct the error before submitting.	All systems except bottled water
P5 Disinfectant Residual	Test results columns	Check values entered for chlorine residuals (P5 Dis.Residual, columns F, I, L, and/or O). Reported values are low. If correct, no change needed.	This warning message appears if the TOTAL chlorine residuals reported on P5 Dis.Residual are lower than 0.5 ppm. It will only appear if the MOR reported that chloramines are used (see cell O41 on P2 Water Quality). If the values reported are correct, no change is needed; just ignore the warning message.	All systems except bottled water

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P5 Disinfectant Residual	Test results columns	Check values entered for chlorine residuals (P5 Dis.Residual, columns G, J, M, and/or P). Reported values are low. If correct, no change needed.	This warning message appears if the FREE chlorine residuals reported on P5 Dis.Residual are lower than 0.2 ppm. It will only appear if the MOR reported that chloramines are NOT used (see cell O41 on P2 Water Quality). If the values reported are correct, no change is needed; just ignore the warning message.	All systems except bottled water
P5 Disinfectant Residual		Distribution system chlorine residual data have already been submitted for this water system. Continuing to upload this MOR will overwrite existing distribution system chlorine residual data (P5 Dis.Residual, B6:P36). Only click 'Submit to EEC' if it is intended to REPLACE previously-submitted distribution data.	This warning message will appear if the PWS has already submitted an MOR with the same PWSID and MMYYYY, and the disinfectant residual data reported in P5 Dis.Residual have been changed from the first submission. If this is intentional (e.g., there was a mistake the first time the MOR was uploaded), then ignore the message and upload like normal.	All systems except bottled water
P6 Chlorine Dioxide		Please enter plant tap sample results for Chlorine Dioxide and Chlorite on P6 ChlorineDioxide, columns D and G.	This warning message appears if there are data missing from the 'Samples taken at the EPTDS daily' columns. Report the plant tap sample results for chlorine dioxide and chlorite for each day that chlorine dioxide was added. For any row in column B that has data, there should also be data in columns D and G.	Treatment plants only
P6 Chlorine Dioxide	MRDL Exceeded? Column	Please fill out the 'Additional chlorine dioxide monitoring' table (P6 ChlorineDioxide, Columns K-N).	Any time there is a 'Y' reported in the 'MRDL Exceeded?' column on P6 Chorine Dioxide, it is necessary to take additional actions and report those results in the 'Additional chlorine dioxide monitoring' table on this page. It may also be necessary to complete the 'Additional chlorine dioxide or chlorite monitoring' table below. If you have questions, consult with the DOW MOR Rule Manager.	Treatment plants only (except bottled water facilities)

Page	Section on Page	eForm Error or Warning Message	Troubleshooting - How to Correct the Issue	Impacted System Types		
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P6 Chlorine Dioxide	MCL Exceeded? Column	Please fill out the 'Additional chlorite monitoring' table (P6 ChlorineDioxide, Columns K-N).	Any time there is a 'Y' reported in the 'MCL Exceeded?' column on P6 ChorineDioxide, it is necessary to take additional actions and report those results in the 'Additional chlorine dioxide or chlorite monitoring' table in the lower right of this page. If you have questions, consult with the DOW MOR Rule Manager.	Treatment plants only (except bottled water facilities)		
P7 Fluoride	Water analysis results columns	Report the daily fluoride water analysis results (P7 Fluoride, Columns D, E).	Monitor fluoride at the plant tap and from the raw water daily, and report results in the 'WATER ANALYSIS RESULTS' column on P7 Fluoride. This warning message appears if there are no data reported in this section.	All water treatment plants serving 3000+, plus any others that add fluoride		
P7 Fluoride	Select Fluoride Chemical cell	Please select the fluoride chemical used by the water system (P7 Fluoride, B3).	You must select a fluoride chemical in the yellow box on the top left (cell B3) of P7 Fluoride. A drop-down list is provided.	All water treatment plants serving 3000+, plus any others that add fluoride		
P7 Fluoride	Fluoride LBS column	Report the pounds of Fluoride added each day (P7 Fluoride, Column B).	If your water system uses sodium fluoride (dry), sodium fluorosilicate, or hydrofluorosilicic acid (HFS), then you must report the pounds of the fluoride chemical added each day in the 'LBS' column (column B) on P7 Fluoride.	All water treatment plants serving 3000+, plus any others that add fluoride		

Page	Section on Page	eForm Error or Warning Message	Troubleshooting - How to Correct the Issue	Impacted System Types			
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P7 Fluoride	Fluoride Gallons column	Report the gallons Fluoride added each day (P7 Fluoride, Column C).	If your water system uses sodium fluoride in a saturator, then you must report the gallons added each day in the 'GALLONS' column (column C) on P7 Fluoride. Alternatively, if you selected 'Sodium Fluoride - Saturator in the yellow box above (cell B3), then this error message will appear. To correct, select the correct fluoride chemical in cell B3 and then fill out either LBS or GALLONS added each day, in columns B or C.	All water treatment plants serving 3000+, plus any others that add fluoride			
Annual Data Page	All	Remember to submit the Annual Data Form by January 10th.	This is just a reminder to fill out the 'Annual Data' page when completing the December MOR.	All systems			
Annual Data Page	All	Remember to submit the Annual Data Form by January 10th.	This message appears if the Annual Data page is blank on the December MOR. Please fill out all relevant sections of the Annual Data page before uploading the MOR.	All systems			
Annual Data Page	Number of Meters	Report the number of meters on the Annual Data page.	Be sure to enter the number of RESIDENTIAL, COMMERCIAL, and INDUSTRIAL meters served on the Annual Data page.	All systems except bottled water			
Annual Data Page	System Population	Report the system population on the Annual Data page.	Fill in the 'SYSTEM POPULATION' section on the Annual Data page.	All systems except bottled water			
Annual Data Page	Consecutive System Populations	If your water system sold water to another water system on the Annual Data page, report population(s) of consecutive systems to whom you sell water.	Fill out the 'CONSECUTIVE SYSTEM POPULATIONS' table on the Annual Data page. If no water was sold to other water systems, ignore this warning message.	Treatment plants only			
Annual Data Page	Water Sold	If your water system sold water to another water system, report the total water sold this year on the Annual Data page.	Fill out the totl number of gallons of water sold to residential, commercial, industrial, and wholesale customers in the 'WATER SOLD (Gallons)' table.	Treatment plants only			
Annual Data Page	Water System Manager/Superint.	Report the water system manager's contact information on the Annual Data page.	Add contact information for the 'WATER SYSTEM MANAGER/SUPERINT.' section	All systems			

Page	Section on Page	eForm Error or Warning Message	Troubleshooting - How to Correct the Issue	Impacted System Types		
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Annual Data Page	Water System Manager/Superint.	Report the water system manager's email address on the Annual Data page.	Add email for the 'WATER SYSTEM MANAGER/SUPERINT.'	All systems		
Annual Data Page	Water System Manager/Superint.	Report the water system manager's phone number(s) on the Annual Data page. Phone number(s) should be in XXX- XXX-XXXX format.	Add email for the 'WATER SYSTEM MANAGER/SUPERINT.' Phone number must be in this format: XXX-XXX-XXXX.	All systems		
Annual Data Page	Distribution	Report the water system distribution manager's contact information on the Annual Data page.	Add contact information under the 'DISTRIBUTION' section, for the distribution system manager.	All systems except bottled water		
Annual Data Page	Distribution	Report the water system distribution manager's email address on the Annual Data page.	Add the email address under the 'DISTRIBUTION' section, for the distribution system manager.	All systems except bottled water		
Annual Data Page	MOR Contact	Report the MOR contact person's contact information on the Annual Data page.	Add the contact information for the 'MOR CONTACT' section	All systems		
Annual Data Page	MOR Contact	Report the MOR contact person's email address on the Annual Data page.	Add the email address in the 'MOR CONTACT' section	All systems		
Annual Data Page	Plant A or Plant B	Report contact information for the water treatment plant supervisor.	Add contact information for the manager of PLANT A and/or PLANT B in those sections on the Annual Data page.	Treatment plants only		